

2-6 Special Functions

Piecewise functions

The maze

Piecewise Functions--a function that is written using two or more expressions

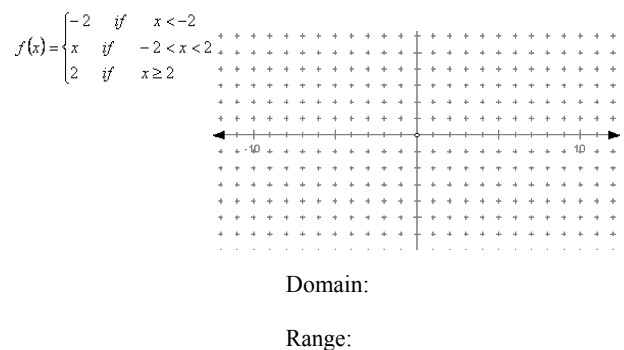
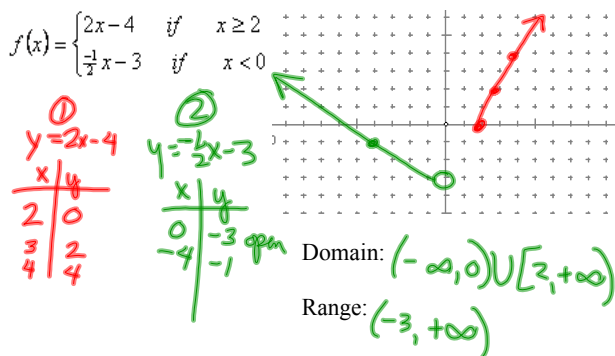
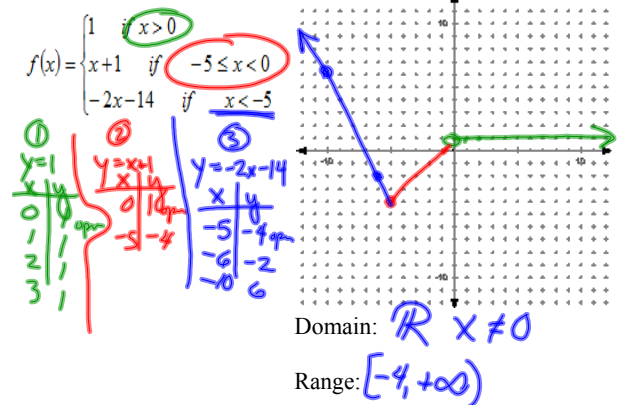
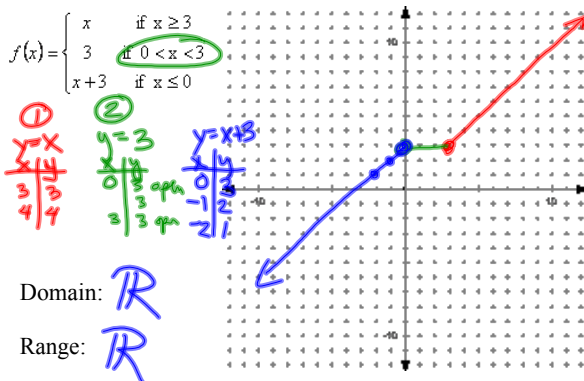
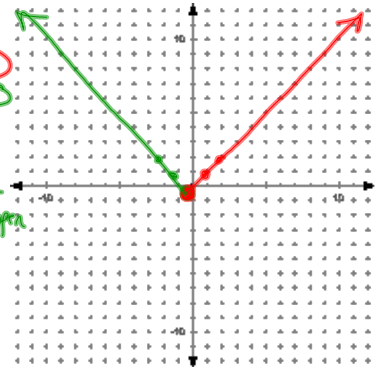
Def. Of absolute value:

$$f(x) = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

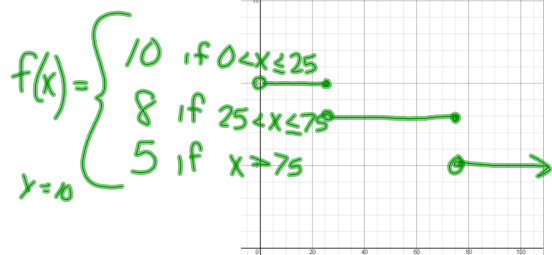
$$\begin{array}{l} \textcircled{1} \\ f(x) = x \\ \begin{array}{r} x \ y \\ 0 \ 0 \\ 1 \ 1 \\ 2 \ 2 \end{array} \end{array} \quad \begin{array}{l} \textcircled{2} \\ y = -x \\ \begin{array}{r} x \ y \\ 0 \ 0 \\ -1 \ 1 \end{array} \end{array}$$

Domain: \mathbb{R}

Range: $[0, +\infty)$



The freshman class wants to buy t-shirts for spirit week. The t-shirt manufacturer sells the first 25 for \$10 each, the next 50 for \$8 each, and anything after that \$5 each. Write a piecewise function representing the cost of t-shirts and then graph it.



HW
p.94
38-40, 44